

REMARKS

Claim 2 has been clarified by deleting the phrase "said hollow flange being formed by expanding the second side end of the hole when said masking member is formed by the vacuum and/or pressure forming" because this feature is fully defined by the recital "and also having a circumference greater than the hole at said second side of the part . . ." and to avoid any possibility of confusion or misunderstanding arising from the term "expanding." For further clarification, claim 2 as herein amended sets forth that the circumferences of the collar and hollow flange are predetermined (supported by the original disclosure e.g. at paragraphs [0027] and [0039] of application publication No. 2005/0175797), and that the hollow flange at the second side of the fitting part is formed to protect against paint mist invading the hole from the second side end of the hole (supported by the original disclosure e.g. at paragraph [0007] of application publication No. 2005/0175797). Claim 10 has been amended to incorporate the recital of previously cancelled claim 9, and has been made dependent on claim 2, to overcome the rejection under 35 U.S.C. §112, second paragraph. Since the present Amendment does not increase either the total number of claims or the number of independent claims, no additional fee is necessary.

Claims 2 (independent) and 3 - 6 and 10 (directly or indirectly dependent on claim 2) are in the application. No claim has been allowed.

Claims 2 - 6 and 10 have been rejected under 35 U.S.C. §103(a) as unpatentable over U.S. patent No. 4,871,585 (Kano et al.) in view of U.S. patent No. 2,328,203 (Duggan), with which U.S. patent No. 5,902,642 (Horiki et al.) is further combined in the rejection of claims 5 and 6.

With reference to the rejection of the claims on the cited art, it may initially be noted that in the present invention, the hollow flange at the second side of the fitting part of the masking member is previously set to have a circumference greater than the hole at the second side end of the part to cover the circumference of the second side end of the hole, while in Kano et al. the masking member is made of water swelling rubber and inserted into the through hole and then swelled by the water. The masking member of Kano et al. is used to protect the hole from plating and not to prevent paint mist from invading the hole from the opposite side of the hole.

The Office Action asserts that Duggan "teaches a flexible rubber mask where both ends are larger than the portion of the hole to which it is inserted in order to seal both ends of the hole

circumference” and that it would have been obvious to use a mask as taught by Duggan in the through hole of Kano et al. in order to avoid a swelling step when sealing the wall of the hole. Further, the Examiner contends that “the use of the flange” of Duggan “that seals around an internal hole end, teaches the general concept of sealing a bore hole with a flange” and that Duggan’s element 28 “can be said to form a hollow portion since the inside of the wall of the flange is pushed outward beyond the circumference of the main portion of the plug wall, and thus can be said to have a hollow portion in relation to the inside main plug wall.”

Applicants respectfully submit, however, that in Duggan’s mask both ends are *not* larger than the portion of the hole in which it is inserted. As Duggan says (p. 1, second column, lines 48-54), “Preferably *the outside diameter of the enlargements 22 and 23 is substantially equal to the inside diameter of the bearing surface 14 and threads 15*, while the outside diameter of the enlargement 21 is substantially equal to the inside diameter of the outer end portion of the throat” (emphasis added).

Thus, Duggan expressly teaches that the enlargement 23 (on which the Examiner relies as corresponding positionally to the hollow flange of applicants’ claimed device) is not larger than the portion of the hole (bearing surface 14 and threads 15) in which it is inserted, and indeed it could not be, since when completely inserted it seats snugly within and is surrounded by that portion of the hole.

In sharp contrast, the hollow flange of applicants’ masking member has a predetermined circumference greater than the hole at the second side of the part to overlies externally, and covers, the circumference of the second side end of the hole. This difference is critical to the function of applicants’ masking member, which serves to protect both ends of a hole having two open ends and does so by having opposed ends respectively protecting the two ends of the hole and respectively formed or provided with a collar and a hollow flange each having a predetermined circumference greater than the hole end it protects.

Neither Kano et al. nor Duggan teaches protecting both ends of a hole with portions of a masking member that respectively have predetermined or pre-existing circumferences larger than the hole ends they protect. In Kano et al., the hole to be protected has two open ends (FIG. 1) and the masking member is inserted entirely therethrough, but at the time of insertion it is not yet swelled and therefore no part of its diameter is larger than the hole (see col. 4, lines 13-17). While

the outwardly projecting ends of the water-swelled member, after insertion, are shown in FIG. 1 as expanding progressively in directions away from the hole, no protective effect is attributed thereto; rather, the hole is protected by contact between the external side surface of the swollen masking member and the inner side wall of the hole, i.e. within the hole (col. 4, lines 18-23 and 35-49). In Duggan, the hole has only one end, and the distal enlargement 23 of the mask is never greater in circumference than the diameter of the hole portion it protects.

Moreover, the use of applicants' claimed masking member requires inserting, entirely through the axial length of a two-ended hole, a portion having a predetermined circumference greater than that of the remote end of the hole through which it passes. This is not true of the masking members of either Kano et al. or Duggan, since the Kano et al. member is uniformly no greater than the hole in which it is inserted until it is swelled with water after insertion, and the leading inserted end of the Duggan mask (enlargement 23) is no larger in circumference than any portion of the hole through which it passes and in which it finally seats. Hence, the provision of a masking member with opposed end portions (collar and hollow flange) both larger than the hole ends that they respectively protect would not be obvious from either Kano et al. or Duggan.

The Examiner, as noted, asserts that Duggan is relied on for "the general concept of sealing a bore hole with a flange." But in Duggan, the distal face of enlargement 23 is pressed against the shoulder 16 (of the reduced-diameter closed inner end portion of the hole) in the same direction in which the mask is pushed into the hole. In applicants' claimed invention, the collar and hollow flange respectively cover oppositely-facing hole ends so that one of them must provide protection by covering its associated hole end with a surface facing in a direction opposite to that of insertion.

To the Examiner's contention that Duggan's element 28 "can be said to form a hollow portion since the inside of the wall of the flange is pushed outward beyond the circumference of the main portion of the plug wall, and thus can be said to have a hollow portion in relation to the inside main plug wall," applicants respond that bevel 28 is provided solely "to eliminate any obstruction to the passage of paint or plating material onto the bottom 13 of the throat" (Duggan, p. 2, first column, lines 25-29), a purpose that has no relevance to any masking structure in the doubly open holes of Kano et al. and the present invention. Hence, the showing and description of this beveled surface in Duggan would suggest nothing with respect to any modification of the teaching of Kano et al. or with respect to the novel device of applicants' invention.

It is therefore submitted that the recitals of amended claim 2 as herein amended, and discussed above, present a clear and patentable distinction over Kano et al. and Duggan, however combined. Claims 3 - 6 and 10 are submitted to be allowable as well, at least by virtue of their dependence on claim 2. Horiki et al., combined with Kano et al. and Duggan in the rejection of claims 5 and 6, adds nothing thereto in regard to the novel and distinguishing features defined in amended claim 2.

For the foregoing reasons, it is believed that this application is now in condition for allowance. Favorable action thereon is accordingly courteously requested.

Respectfully,



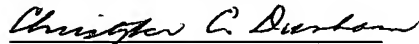
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Reg. No. 22,031 Date FEB. 29, 2007